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Alberta Forest Health Strategy and Shared Roles and Responsibilities Between SRD and the Forest Industry

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**Public Lands and Forests Division
Forest Management Branch
Forest Health Section**

Alberta
SUSTAINABLE RESOURCE
DEVELOPMENT

EXECUTIVE SUMMARY

Protecting Alberta's forests from pests is a responsibility shared by the Crown and the forest industry. The Department of Sustainable Resource Development (SRD) ensures maximum benefits from Alberta's forests, in part, through an effective forest health program. Healthy forests provide sustainable fibre resources, improved recreational opportunities, healthy biodiversity and a higher quality of life for all Albertans to enjoy. Due to the current economic, social and environmental trends, the SRD forest health program requires a new direction, especially in the roles that SRD and the forest industry play in the management of forest pests.

This document describes the following:

- a) Strategic directions for the forest health program for the forested Crown land of Alberta, and;
- b) Shared roles and responsibilities between SRD and the forest industry for forest health related activities.

Forest Health

A healthy forest is able to sustain itself ecologically while providing for society's economic, social, recreational and spiritual needs and values. Forest health is a term used to describe the condition of a forest and how well it is able to meet management objectives. From a forestry perspective, management objectives focus on the health of the trees. However, the majority of Alberta's forests are not designated for fibre production, and for these areas the focuses shift to the health of the forest ecosystem and maintaining healthy ecological processes at the landscape level.

Alberta must deal with two major long-term issues: potential climate warming and ageing forests. Insect pests expand their ranges to new forest environments much faster with a warming climate. Within the next 30 years over 80% of white spruce, pine and aspen would reach the overmature age class depending upon frequency and severity of wildfire occurrences and the rate of harvest. In light of potential climate warming SRD and the forest industry must jointly develop a strategy to rejuvenate Alberta's forests and create healthy vigorous forests that can withstand catastrophic future forest fires and pest outbreaks. Catastrophic forest fires and pest outbreaks are symptoms of unhealthy forests.

Integrated Pest Management

Forest pests destroyed an estimated 7.3 million cubic meters of timber resources each year in Alberta between 1988 and 1992 (Brandt 1995). This was equivalent to 47% of the timber volume annually harvested during the period. SRD and the forest industry believe that minimizing losses from forest pests is one of the most economically, environmentally and socially acceptable approaches to increase net fibre yields. SRD promotes proactive Integrated Pest Management (IPM) programs to be implemented by the forest industry to increase fibre production. To achieve this mission SRD focuses on

education and awareness, extension services, overview pest surveys, pest risk and impact assessments. If an unprecedented outbreak threatens sustainability, affected companies may propose to SRD joint or cost-shared pest management operations to ensure sustained yields. SRD also facilitates emergency pest management activities to prevent catastrophic damage by invasive species such as the mountain pine beetle.

Roles and Responsibilities

Shared roles and responsibilities of SRD and the forest industry are also described for various forest health activities as follows:

Prevention, Awareness and Education are the prime focus of SRD with special emphasis on extension services and public communications.

Detection, Monitoring and Survey is a shared responsibility. SRD focuses on detection, monitoring and assessment by overview surveys and data management, whereas the forest industry focuses on detection, monitoring and assessment by operational ground surveys.

Pest Control and Forest Health Improvement including pesticide treatment, sanitation cutting and forest health improvement is mainly the forest industry's responsibility; however, SRD assumes the lead role and coordinates emergency bark beetle control programs.

Forest Health Policy and Standard, including liaison for national and international standards, is a prime responsibility of SRD.

Exotic and Invasive Pest Management is a shared mandate between the federal government, SRD and the forest industry.

Research and Development is a shared responsibility. SRD facilitates forest health research and development, and may coordinate projects with the forest industry, Canadian Forest Service, Alberta and National Research Councils and Universities.

Forest Pest Categories

Important forest pests are grouped into five categories and a general management strategy is described for each category.

Category A: Pests federally regulated under the *Plant Protection Act*

Category B: Pests that can kill a mature tree within a year

Category C: Major defoliators

Category D: Pests that cause chronic diseases and disorders

Category E: Pests of young trees

SCOPE OF THE DOCUMENT

This document describes the strategic directions to improve forest health conditions of Alberta's forests and forest ecosystem, and management strategies for important forest pests. It also describes shared roles and responsibilities between SRD and the forest industry for forest health related activities.

The management of invasive non-native plants is also a shared responsibility; however, it is not included in this document. It has been described in the Forest Management Policy Directive Number 2001-06: **Weed Management in Forestry Operations**. Pesticides in this document include all federally registered pest control products; however, the products used to control vegetation (herbicides) are excluded.

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FOREST HEALTH MANAGEMENT STRATEGY

Introduction

Historically, forest management planning in Alberta did not anticipate pest problems. When major outbreaks occurred, treatments were reactive, often delayed and sometimes inadequate. Salvaging pest-damaged stands minimized timber losses. Although a “wait and see” approach was appropriate in the past, present pressures for fibre demands new pest management approaches. The Alberta Industry-Government Task Force Recommendations in 1995 summarized these forest insects and diseases concerns in the following statement:

"During the past decade, demands for forest products and non-timber uses of forest lands have increased enormously. Gone are the days where fibre shortages could be made up by going a little further away from the mill. Gone are the days when we could "wait and see" whether an insect and disease problem would go away. Insect and disease issues are chronic concerns. If we do not develop the tools to address these issues, they will remain a problem, and we will always be in reactive mode."

Protecting Alberta's forests from pests is a shared responsibility between Sustainable Resource Development (SRD) and the forest industry. Due to current economic, social and environmental trends, Alberta's forest health program requires a new direction, especially in the roles that SRD and the forest industry play in the management of forest pests. The goal is to ensure maximum benefits from Alberta's forests with an effective forest health program. Healthy forests provide sustainable fibre resources, improved recreational opportunities, healthy biodiversity and a higher quality of life for all Albertans to enjoy.

Forest Health

Forests are complex ecosystems and a prominent part of Alberta's landscape. A healthy forest is able to sustain itself ecologically while providing for society's economic, social, recreational and spiritual needs and values. Forest health is a term used to describe the condition of a forest and how well it is able to meet management objectives. From a forestry perspective, management objectives focus on the health of the trees. However, the majority of Alberta's forests are not designated for fibre production, consequently for these areas the focuses shift to the health of the forest ecosystem and maintaining healthy ecological processes at the landscape level.

A Long-Term Forest Health Risk

While a short-term pest management focuses on pest infestations, a long-term approach must focus on the health of forests and the management of forest structure (host tree species) to minimize future pest risks. Both approaches are required for a complete Forest Health Program. SRD and the forest industry need to develop a long-term strategy to improve forest health conditions and the forest industry must assume a lead role in incorporating forest health considerations into their forest management planning process and operations.

Alberta must deal with two major long-term forest health issues: potential climate warming and ageing forests. Historical climate records in Alberta indicate a warming trend in the last century. It is reasonable to assume this trend will continue for the foreseeable future. Many forest pest species in North America are expanding their ranges into more northern regions. This suggests that the pests are adapting to new environments or the region is becoming warmer. Evolutionally, pests can adapt to new environments in a short time; combined with global warming this could lead to ever increasing outbreaks, especially if these processes are synergistic. Alberta Environment Climate Change suggests that insect pests expand into new habitat ranges much faster with changing climate than forests can acclimatize. As these pests would be new to the forests, trees would not have natural defenses against them. Insects would have the potential to do as much damage as invasive foreign pests.

The mean annual temperature difference between Prince George, British Columbia and Hinton, Alberta is only 0.8° C. In the last few decades British Columbia has experienced major outbreaks of forest pests such as the mountain pine beetle and spruce beetle. Alberta was believed to be too cold for many pests found in British Columbia, however, the last mountain pine beetle outbreak in southern Alberta proved otherwise. There is no doubt that some parts of Alberta will face similar forest pest outbreaks that the interior British Columbia is currently experiencing if the current warming trend continues.

Another major problem that Alberta will face in the next 20 to 30 years is ageing forests. Currently over 60% of Alberta's deciduous, pine and white spruce forests are in the over 60-year, over 80-year and over 100-year mature age classes respectively (Figures 1, 2 & 3). If the current trend continues within the next 30 years over 80% of these species would be in the overmature age class. This pattern could be modified if there were a change in the frequency and severity of wildfire and rate of harvests.

Naturally, an ageing population is more vulnerable to insects, diseases, adverse environmental conditions and forest fires. An abundance of overmature forests will provide added possibilities for major outbreaks of forest pests. In light of possible climate warming SRD, the forest industry and other federal and provincial agencies must work together to implement a strategy to rejuvenate Alberta's forests and create healthy vigorous forests that can withstand catastrophic forest pest outbreaks and wildfires in the future.

The current harvestable forested area is approximately 40% of Alberta’s forested Crown land. Harvesting alone will not effectively rejuvenate ageing forests; therefore, prescribed fires must be introduced to the landscapes. A combination of strategic harvesting and vigorous prescribed fires are essential to avoid future catastrophic events. Catastrophic forest fires and pest outbreaks are symptoms of unhealthy forests. Wildfire prevention and integrated pest management programs need to focus on forest health improvements by rejuvenating Alberta’s forest landscapes.

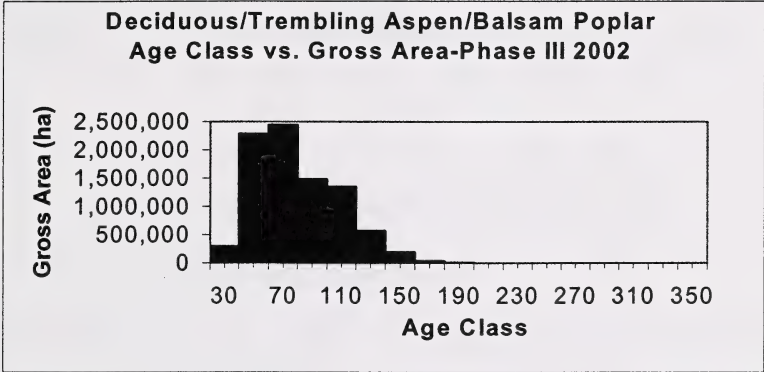


Figure 1. Deciduous/Trembling Aspen Age Class vs. Gross Area

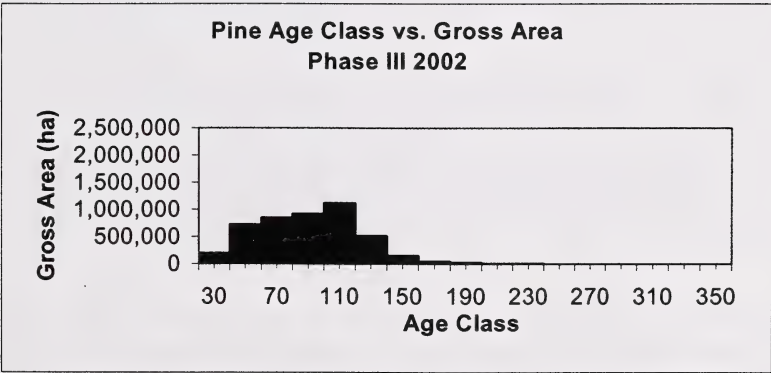


Figure 2. Pine Age Class vs Gross Area

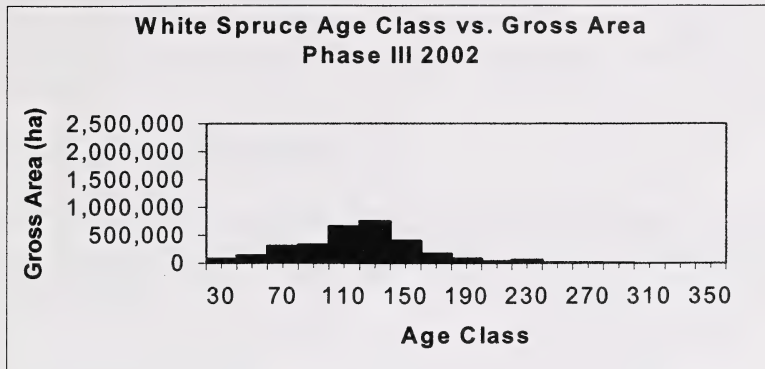


Figure 3. White Spruce Age Class vs. Gross Area

Current Integrated Pest Management (IPM)

Forest pests destroyed an estimated 7.3 million cubic meters of timber resources each year in Alberta between 1988 and 1992 (Brandt 1995). This was equivalent to 47% of the timber volume annually harvested during the period. During this review period major pest outbreaks such as the mountain pine beetle and spruce budworm were either absent or minimal; therefore, this estimate does not reflect true depletions that can be caused by these pest outbreaks. If tree mortality from these pests were present, the depletion estimate would have been significantly higher.

The forest inventory of Alberta reflects yields from forests that have been largely unprotected from pests. It is realistic to assume that a more aggressive approach to pest management could increase fibre yield from Alberta's forest resources. SRD and the forest industry believe that minimizing losses from forest pests is one of the most economically, environmentally, and socially acceptable approaches to increase fibre yields.

Most of Alberta's forest fibre resources are currently managed by the forest industry. The forest industry (FMA and Quota holders) is given the authority to make management decisions within a framework of sustainable forest development. Therefore, an IPM approach provides a great opportunity for the forest industry to improve forest fibre productions. Important pests such as the mountain pine beetle, spruce beetle, spruce budworm and dwarf mistletoe can be proactively managed so that extensive tree mortality and salvage operations can be avoided, and impacts on the annual allowable cut are minimized.

SRD and the forest industry promote a proactive IPM program to be implemented by the forest industry to increase fibre productions in their management units. To achieve this mission SRD focuses on education and awareness, extension services, overview pest

surveys and pest risk and impact assessments, whereas the industry focuses on operational aspects and implementation of the IPM program. SRD and the forest industry jointly facilitate regional IPM working groups that set regional priorities, coordinate research activities and share IPM experience. SRD also coordinates emergency pest management activities to prevent catastrophic damages by invasive species such as the mountain pine beetle.

Existing Policy and Legal Obligations

Various federal-provincial initiatives, Forests Act and Forest Management Agreement provide management directions and obligations of SRD and the forest industry for integrated pest management. Given below are some related statements cited from these documents.

National Forestry Strategy states, “Insects and diseases are also natural and necessary to forest ecosystems in Canada. Although insects and diseases are a natural part of forest ecosystems, they sometimes cause major losses to forest values. Each year, millions of hectares of forest are affected by insects and diseases such as the spruce budworm and bark beetles. Attention is being focused on integrated pest management that takes a more ecological and sustainable approach.”

Alberta National Forestry Strategy Implementation Action Plan states, “Expanding use of integrated pest management, maintaining import quarantine controls, and emphasizing non-chemical approaches and biological controls, where appropriate.”

The Alberta Forest Legacy - Implementation framework for Sustainable Forest Management states, “The Alberta Forest Legacy shifts us beyond land management practices designed for single outputs, such as timber and oil. It challenges us to look at a much broader landscape, and to blend consideration of all resource values, measurable and perceived, when making our management decisions. We opt for this shift because it points us toward sustainability.” It also emphasizes the principle of Adaptive Management that allow us to move forward in an experimental, informed, and continuously improving fashion.

Forests Act: “The Minister may enter into a forest management agreement with any person to enable that person to enter on forest land for the purpose of establishing, growing and harvesting timber in a manner designed to provide a perpetual sustained yield.”

Forest Management Agreements: “On the Forest Management area the Company shall follow sound forestry practices with the purpose of achieving and maintaining a perpetual sustained timber yield from the productive forest land, while not diminishing the productivity of the land.”

The agreements also state, “In the event of an occurrence of insect damage of epidemic nature to forest growth or a disease epidemic affecting forest growth on the forest management area the parties hereto will cooperate in suppressing the epidemic.”

Timber Management Regulation [164(a)]: The Minister may refuse to allow green timber to be harvested in an area where dead or damaged timber is available in sufficient quantities for the required use, or for any other reason.”

Integrated Pest Management (IPM) Based on Pest Category

Important forest pests of Alberta can be grouped into five categories based on potential economic, social and environmental impacts. General management strategies and key roles and responsibilities of SRD and the forest industry are described for each category as follows:

Category A: Pests federally regulated under the *Plant Protection Act*

Certain exotic pests and movement of potentially infested products are regulated by the federal acts and regulations. The Canadian Food Inspection Agency is the lead agency in managing these pests in Alberta. In the event of detecting an active infestation in Alberta, the Alberta Critical Pest Infestation Response Plan may be activated to quarantine affected materials and eradicate the pest. SRD assumes key roles in managing these pests, as described in the plan.

Examples: gypsy moth, Asian longhorn beetle, brown spruce longhorn beetle, pine shoot beetle, and eight-spined spruce bark beetle.

Category B: Pests that can kill a tree within a year

Some bark beetles can kill a mature tree in a few months to a year. Small pockets of an infestation can quickly build up to an epidemic in a few years and thousands of large mature trees can be destroyed. Pests in this category can cause significant economic, social and environmental damages, and are considered to be the most serious pests of Alberta’s forests. Management of these pests requires early detection and swift control actions, similar to wildfire management, to prevent population build-ups and further spread of the pests as well as reducing susceptibility of forests.

SRD assumes a lead role in managing these pests and conducts surveillance and overview surveys; however, collaboration from all resource and land management agencies and industries, especially the forest industry is essential to implement effective management operations. Affected FMA companies manage infestations and reduce the future risk in their FMA areas, whereas SRD focuses on lands outside of FMA areas and other Crown lands such as Provincial Parks and Protected Areas. Obligations of Quota and other permit holders are limited to harvest pest infested or high-risk stands, and SRD evaluates and directs companies to harvest designated

stands. Management of the Category B pests requires an intensive planning and cooperation between SRD, the forest industry and other land management agencies at a landscape level.

If an unprecedented outbreak threatens sustainability, affected companies may propose to SRD, or SRD may propose to affected companies to conduct joint or cost-shared pest management operations to ensure sustained yields.

Examples: mountain pine beetle and spruce beetle.

Category C: Major defoliators

Defoliators are the most common and abundant forest insects in Alberta. Species in this category can defoliate millions of hectares. Annual growth loss caused by defoliators during the period between 1988 and 1992 was over 1.8 million m³, equivalent to 10% of the annual harvested volume (Brandt 1995). Defoliators are pests of economic significance, however, the current growth and yield assessments have accounted for certain volume depletions caused by these pests, therefore, volume allocations to the forest industry are not normally affected.

Severe defoliation can cause immediate growth reductions, and tree mortality can occur after several consecutive years of severe defoliation. Biological and bio-rational insecticides are commercially available to suppress most defoliator populations. Protecting forests from defoliators is a business decision, which the affected companies can consider. The protection from these defoliators can increase fibre yield and avoid unmanageable salvage operations.

Generally, inability to control these defoliators should not affect the company's goal to maintain a perpetual sustained yield. However, if an unprecedented outbreak threatens sustainability, affected companies may propose to SRD, or SRD may propose to affected companies to conduct joint or cost-shared pest management operations to ensure sustained yields. It is generally not feasible for SRD to manage the Categories C pests, unless it is the social, economic or environmental interest of the general public.

Examples: spruce budworm, forest tent caterpillar and large aspen tortrix.

Category D: Pests that cause chronic diseases and disorders

Certain organisms cause chronic disease conditions of trees and affect the health of trees throughout their life cycle and sometimes cause tree mortality. Pests in this category cause the largest volume depletion. Wood decay and dwarf mistletoe alone cause an estimated annual depletion of 5.4 million m³ (Brandt 1995). Root diseases and needle casts are also suspected to cause a similar volume loss.

Unfortunately, there are no quick remedies for these conditions; however, carefully prescribed harvest and silvicultural operations can significantly improve conditions at the stand level. Although these chronic disease conditions should not affect the current volume allocations, the forest industry must consider these conditions during the forest management planning process, especially during the pre-harvest assessment and harvest planning, to minimize future growth impacts. In some instances such as dwarf mistletoe infested stands, the use of proper sanitation can significantly increase the productivity of the stands. It provides excellent opportunities for the industry to increase fibre yields.

Examples: needle casts, lodgepole pine dwarf mistletoe, atropellis canker, decay fungi, Armillaria root disease, and tomentosus root rot.

Category E: Pests of young trees

Certain pests can cause tree deformity, stunted growth and tree mortality in young trees. The impact caused by a given pest depends on the site characteristics, environmental factors, tree species, stand density and canopy structure. Proper silvicultural prescription and treatment, or sometimes delaying certain silvicultural treatments can reduce the impact of certain pests at the stand level.

Crown land reforested by the forest industry is required to meet the reforestation standards. The industry may assess potential pest problems during the pre-harvest assessment, establishment and free-to-grow surveys, so that the reforestation standards can be met. Accumulated survey data also aids in determining potential pest problems in new areas that can be mitigated during the future harvesting and reforesting processes.

Examples: white pine weevil, blister rusts, Warren root collar weevil, Armillaria root disease and western gall rust.

ROLES AND RESPONSIBILITIES

This section defines shared roles and responsibilities between SRD and the forest industry for various forest health related activities.

Prevention, Awareness and Education

Extension Services

One of the primary functions of SRD is to provide forest health extension services to all stakeholders. Services include pest identification, damage diagnosis, initial assessment of damage and technology transfer. SRD provides advice and basic training in diagnosis, ground surveys and control procedures. It also develops educational tools that help clients to improve their IPM knowledge and skills.

SRD and the forest industry cooperatively develop public education programs to increase awareness of forest health especially in management of important pests, pesticide use and pest impacts. SRD may conduct information sessions and workshops on specific forest health issues.

SRD utilizes the Forest Health website to provide updated information to clients. SRD annually publishes a report: Forest Health in Alberta, to document forest health conditions and forecasts for Alberta. SRD also publishes newsletters and various information brochures to inform the forest industry and other stakeholders.

Public Communications

SRD has a mandate to inform Albertans about forest health initiatives and issues on the forested Crown land of Alberta. SRD develops communications plans to ensure the department's messages and services are delivered to Albertans. Communication plans describe strategies and tools to address the information needs of the public and media.

Detection, Monitoring and Survey

Detection of Pest Infestations and Severe Weather Damage

Detection is an important component of an integrated forest health program. Early detection and timely control/sanitation programs can prevent major infestations that are costly and difficult to manage. However, the forested Crown land of Alberta covers 35 million hectares. It is impractical for any one agency to provide surveillance over the entire area. Therefore, detection is a responsibility of every individual working in resource agencies, industries and the public that use the forest. SRD and the forest industry each train their staff members to report pest occurrences and suspected incidences. All suspected mountain pine

beetle, spruce beetle, spruce budworm, exotic pest occurrences and severe storm damages should be reported for confirmation. SRD or the forest industry will investigate these reports.

Use of Pheromones

Pheromones are one of the most effective and economical tools to detect and monitor forest insect populations. Pheromones also can be used in conjunction with silvicultural practices to control pests. However, the misuse of pheromones can invite unwanted insect infestations and may lead to pest outbreaks. Use of pheromones in forested Crown land is strictly controlled by SRD.

SRD maintains certain pheromone monitoring plots to detect pest activities or to forecast population trends. Forest companies may participate in the SRD pheromone pest monitoring programs. SRD also encourages new pheromone research and development with support from the forest industry.

Aerial Overview Surveys and Ground Truthing

SRD and the Canadian Forest Service conducted aerial surveys jointly up to 1997. SRD has carried out routine aerial surveys since 1998. SRD maintains its responsibility to conduct aerial overview surveys of major forest insect and disease occurrences. Aerial overview surveys are landscape level assessments and conducted at a scale of 1:250,000. All aerial survey maps are available to the forest industry and the public. SRD annually determines the areas and pests to be surveyed in consultation with the forest industry. When the risk of Category B infestations, e.g., mountain pine beetle and spruce beetle, is high, SRD conducts reconnaissance flights over the suspected areas.

Operational Surveys and Assessment

Operational surveys are conducted for detailed assessment of damage and to prepare management and control treatment plans. SRD and the forest industry jointly conduct operational surveys for Category B pests. The FMA holders conduct operational surveys within their FMA, and SRD conducts surveys mainly outside of these areas so that all Category B pest infestations are identified for control treatments and assessment. Under outbreak situations SRD coordinates operational surveys and management for these pests at a landscape level.

Spruce budworm operational surveys are essential to determine the need for control treatments and spray blocks. Forest companies considering aerial spray treatments must conduct operational surveys, such as the second-instar larval survey, and prepare detailed sketch maps prior to planning such operations.

The forest industry is encouraged to conduct surveys of other forest pests and their damage. Most of these surveys can be carried out in conjunction with other

silvicultural activities such as establishment and free-to-grow surveys, precommercial thinning, and preharvest assessment. SRD again provides instruction and expertise to the forest industry.

Forest Health Data Management

SRD maintains forest health data archive systems to house various ground survey and monitoring results, incidence reports, and aerial survey maps. The SRD system carries all survey data collected by SRD and forest health data submitted by the forest industry. Since forest pests do not recognize FMA boundaries it is essential to share information on pest conditions. Data in the SRD system are available for all clients to use. The forest industry may use these data for their decision support systems or to develop products such as an operational treatment map or a priority area map for harvesting.

Pest Control and Forest Health Improvement

Control Operations

Category B pests such as mountain pine beetle and spruce beetle can quickly spread and cause extensive tree mortality in a short time. They potentially destroy forests over an entire landscape and affect various industries and recreational opportunities in Alberta. The FMA holders are required to submit a control plan and carry out control treatments of beetle-infested trees in their FMA. SRD approves and audits control treatments. SRD carries out certain treatments outside of FMA. When infestations occur both inside and outside of these areas, all affected parties cooperate in a joint effort to control the beetle and SRD coordinates the operations.

Category C pests such as spruce budworm can build up to an unprecedented level causing significant fibre loss and tree mortality that may threaten the sustainability of the forest. The company that may wish to implement an emergency joint or cost-shared pest control operation must submit a proposal to the Executive Director of the Forest Management Branch eight months prior to the implementation. The proposal will be evaluated based on the nature of emergency. SRD assists industry in preparing such documents by providing expertise and data.

Category D diseases, such as dwarf mistletoe, can be managed to increase long-term timber supplies. The forest industry is advised to implement control treatments where feasible. SRD assists the forest industry in developing treatment strategies and logistics of operations.

Use of Pesticides and Biological Control Agents

The Alberta National Forestry Strategy Implementation Action Plan emphasizes non-chemical approaches and biological controls, where appropriate. There are many biological and bio-rational pesticides that have low impacts to the environment. These pesticides are recommended over the conventional chemical pesticides for forestry use in Alberta's Crown lands.

Pesticides are designed to kill pest organisms, and the use of pesticides has certain levels of environmental and social impacts. However, certain pest outbreaks can cause greater environmental and social, as well as economical impacts. Therefore, the use of pesticides is generally considered where these pest impacts are considered to be greater than the environmental, social and economic impacts of the pesticide treatment. Use of pesticides is one of the integrated forest pest management tools, however, other silvicultural, mechanical and biological options should also be explored before considering the pesticides.

Biological control agents are living organisms that can be released into the environment to control pest populations. The public can scrutinize use of these materials on public land; therefore, the use of biological control agents are strictly controlled and monitored by SRD.

Sanitation Cutting

The forest industry plans and implements sanitation cutting to utilize pest infested or storm-damaged trees according to the direction provided by SRD. Sanitation cutting uses harvesting as a tool to control or prevent the spread/build-up of these pests, therefore, the timing of operations is a critical element. Sanitation cutting can be a clear cut or a selective cut. SRD may direct disposition holders to harvest infested trees or high risk stands within a certain time frame. SRD audits sanitation cut operations. An emergency sanitation cutting AOP can be approved on short notice.

Salvage Operations

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Despite all best efforts, pest outbreaks can occur and cause extensive tree mortality. Unlike wildfire kills, tree mortality caused by most forest pests is progressive over a few to several years. The forest industry assesses damage, develops salvage plans and implements salvage operations under the direction of SRD. Salvage plans must be approved through the AOP process. SRD may direct disposition holders to salvage harvest pest damaged stands within a certain time frame.

Forest Health Improvements

The forest industry is advised to manage proactively to improve the health of forests. SRD provides expertise to help assess conditions and transfer current technologies to the forest industry. Healthy forests are less susceptible to pest damage and adverse environmental conditions. Stressful conditions should be improved where feasible. It is documented that the mountain pine beetle prefers stressed mature pine stands. Certain stand tending practices can increase the tree vigor and reduce the susceptibility of these stands to the mountain pine beetle. The spruce beetle prefers storm-damaged trees and blow downs. A sanitation harvesting of the damaged trees can prevent a build-up of the beetle populations.

Another issue that both SRD and the forest industry need to consider is the ageing forest problem. Forest health care costs increase as the forests become old. If the current trend continues, catastrophic pest outbreaks and forest fires will threaten the sustainability of Alberta's forest. Therefore, it is essential to rejuvenate the forests to a more desirable age class distribution.

SRD focuses on introducing prescribed fires to the landscapes mainly outside of FMA areas, whereas the forest industry focuses on the strategic priority harvesting to remove overmature unhealthy forests replacing with young vigorous forests.

Forest Health Policy and Standard

Policy Development

Forest health policy development is one of the prime responsibilities of SRD. Forest health policies are science-based, appropriately consulted and approved. These policies ensure that forested Crown land of Alberta is managed on a sustainable basis for the multiple values and benefits for all Albertans. These values include economic, social and environment considerations. SRD consults with stakeholders especially the forest industry during the policy development processes.

National and International Standards

The development of forest health related national and international policies and standards is a federal responsibility. However, these policies and standards affect Alberta's forest management practices; inter-provincial movement of forest products; and exports of Alberta forest products. SRD ensures that needs of Albertans and Alberta forest industry are considered by the federal government. The forest industry may also bring its concerns to the federal government through the Federal Government industry group consultation process.

Exotic and Invasive Pest Management

Exotic Pest Management

Exotic pests are species introduced from their normal range of distribution into Canada as a result of human activities. Prevention is the key strategy for exotic pest management. It is impossible to eradicate an exotic forest pest once the pest is established in a new forest environment. The federal government regulates most exotic species, and the Canadian Food Inspection Agency (CFIA) has a mandate to manage these pests. SRD works with CFIA to detect, assess and control exotic pests.

For non-regulated exotic pests, SRD determines their potential impacts to forestry, long-term effects to the environment and feasibility of control programs. Jointly with the federal government, SRD may declare an emergency and implement an eradication program that includes directing timber disposition holders to control the pest by harvesting infested trees. The forest industry ensures due diligence in preventing introduction and reporting exotic pest infestations to SRD.

Exotic forest pests can be carried inside firewood or untreated wood packing materials and wire spools that are used for imported commodities. These pests can also attach to outdoor recreational equipment and household materials. Therefore, SRD works with CFIA to implement effective public education programs. The forest industry is also expected to help educate the public and other industries.

Invasive Pest Management

Currently SRD considers the mountain pine beetle as an invasive species indigenous to Canada. Introduction of this species into jack pine forests may have significant ecological impacts and SRD prohibits movement of infested logs and forest products with bark attached from the mountain pine beetle infested areas of North America into the non-infested area of Alberta.

Research and Development

Research and development are essential requirements for Adaptive Management. New knowledge and technology ensure Alberta's advanced forest health program. However, funding and scientists for forest health research and development are limited in Alberta and in Canada. Therefore, the research and development need be coordinated to focus on priority projects and avoid duplication. The forest industry is encouraged to initiate forest health related researches and share resources for joint researches with other stakeholders.

SRD promotes the research and development projects that improve forest health conditions, as well as develop new technologies to improve IPM practices in Alberta. SRD actively participates in national research groups and federal government program reviews to ensure Alberta's research and development needs and opportunities are communicated to researchers. SRD facilitates forest health research and development when it is appropriate, and may coordinate joint research and development projects with the forest industry, other stakeholders and government agencies such as the Canadian Forestry Service, Research Councils, and universities.

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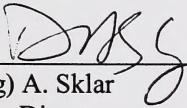
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IMPLEMENTATION AND REVIEW

This Policy comes into effect at the sign-off date. The document will be reviewed to ensure that the policies are current and effective every 5 years beginning from the sign-off date. The reviewing procedures will incorporate the same principles of shared participation used to create this document.

Date: December 2, 2003



D. (Doug) A. Sklar
Executive Director
Forest Management Branch

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